

Claims

1. A wellbore fluid for injection into subterranean formation, comprising a surfactant for forming a viscoelastic (VES) gel; a hydrophilic-lipophilic organic compound with one or more polar groups; and a salt concentration in the range of 0 to 6.0 wt%.
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2. The wellbore fluid of claim 1, wherein the organic compound is miscible with the VES gel formulation.
3. The wellbore fluid of claim 1, wherein the organic compound is non-ionic.
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4. The wellbore fluid of claim 1, wherein the organic compound is composed of a linear or branched saturated or partially unsaturated carbon chain comprising one or more polar groups.
5. The wellbore fluid of claim 1, wherein the polar groups are -OH, -SH or -NH₂.
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6. The wellbore fluid of claim 1, wherein the compound contains at least one other group selected from an ether, ketone, amide, ester, phosphate ester or phosphonate ester group.
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7. The wellbore fluid of claim 1, wherein the organic compound is a mono-alcohol, a diol, an ethoxylated alcohol, ethoxylated amine, alkanolamide or fatty acid ethoxylate.
8. The wellbore fluid of claim 1, wherein the organic compound is propan-2-ol, butanol, octan-1-ol, oleyl alcohol, versatyl alcohol, butanediol, butyl amine, oleyl amine or a dimeric oleyl amine.
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9. The wellbore fluid of claim 1, wherein the VES gel is formed from a surfactant which is anionic, cationic or zwitterionic.
10. The wellbore fluid of claim 1, wherein the surfactant is
5 a carboxylate or modified carboxylate, a compound of formula R-X-Y-Z, in which R is the hydrophobic tail of the surfactant, Z is the hydrophilic head of the surfactant, preferably carboxylate, COO^- or sulphonate, SO_3^- , said hydrophilic head group being charged, X is a
10 stabilising group and Y is a linear, saturated or unsaturated chain of 1, 2 or 3 carbon atoms or a branched, saturated or unsaturated hydrocarbon chain wherein the main chain is of 1, 2 or 3 carbon atoms, with or without incorporating an aromatic ring; a
15 quaternary ammonium compound; an alkyl betaine/sulphobetaine or an alkyl amido betaine/sulphobetaine.
11. The wellbore fluid of claim 1, wherein the surfactant is derived from oleic acid, linoleic acid or mixtures thereof, erucic acid, tallow acid, dimeric /trimeric/
20 oligomeric carboxylic acids; oleic acid dimer gels, oleyl ester succinate, oleyl amide succinate, oleyl sarcosinate or N-erucyl-N,N-bis(2-hydroxyethyl)-N-methyl ammonium chloride.
12. The wellbore fluid of claim 1, wherein the molar ratio
25 of organic compound to surfactant is in the range of 0.05 to 5.
13. The wellbore fluid of claim 1, wherein the viscosity of the fluid at the point of injection is above 20 cp at 100 s⁻¹ at a temperature of above 50 degrees Celsius.

14. The fluid of claim 19, having a viscosity above 50 cp at 100 s⁻¹ at a temperature of above 50 degrees Celsius.

5 15. The fluid of claim 19, having a viscosity above 50 cp at 100 s⁻¹ at a temperature of above 60 degrees Celsius.

16. The fluid of claim 19, having a viscosity above 60 cp at 100 s⁻¹ at a temperature of above 60 degrees Celsius.

10 17. The wellbore fluid of claim 1, wherein the molar ratio of organic compound to surfactant is in the range of 0.05 to 5 and the viscosity of the fluid at the point of injection is above 20 cp at 100 s⁻¹ at a temperature of above 50 degrees Celsius.

15 18. The wellbore fluid of claim 1, wherein the salt concentration is less than 5 wt%.

20 19. The wellbore fluid of claim 1, wherein the salt concentration is less than 4 wt%.

20. The wellbore fluid of claim 1, wherein the salt concentration is the concentration of inorganic salts.

25 21. The wellbore fluid of claim 1, wherein the salt concentration is the concentration of organic and inorganic salts.

30 22. The wellbore fluid of claim 1, being a fracturing fluid or a diverting fluid.

23. A method of treating a subterranean formation using the wellbore fluid of claim 1.